

REMARKS

Applicant respectfully requests reconsideration of the present application in view of the foregoing amendments and in view of the reasons that follow. After amending the claims as set forth above, claims 1-4 and 6-20 are now pending in this application.

Interview

Applicant wishes to thank the Examiner for the courtesy extended to Applicant's representative, Mr. Matthew Kremer (Reg. No. 58,671) for the telephonic interview of October 30, 2007. The results of which have been incorporated into this Amendment and Reply.

Rejection of claims 1-4, 6, 8-12, and 14-16 based on Morimoto and Vaughn

Claims 1-4, 6, 8-12, and 14-16 are rejected under 35 U.S.C. 103(a) as obvious over U.S. Patent 4,729,871 ("Morimoto") in view of U.S. Patent 5,133,864 ("Vaughn"). For at least the following reasons, this rejection is traversed.

Claim 1 recites a layered filter structure with a second layer consisting of a self-supporting layer of sintered short metal fibers. A self-supporting layer is a layer that can be handled as such, and can for example be transported as such. (Page 2, lines 6-8 of the original specification.) Morimoto, Vaughn, or any combination thereof fails to teach or suggest this feature. For example, Morimoto merely describes a process for preparing a porous metal plate by applying an adhesive on a substrate, embedding short metal fibers in said adhesive to form a composite, applying pressure to the composite, and sintering the composite. (Column 1, line 66 to column 2, line 7 of Morimoto.) According to Morimoto, the layer of short metal fibers is embedded in an adhesive layer. Thus, an adhesive is present in the layer of Morimoto, while the second layer of claim 1 only has sintered short metal fibers. Because the layer of Morimoto has adhesive, Morimoto does not teach or suggest a second layer consisting of a self-supporting layer of sintered short metal fibers. Vaughn does not cure the deficiencies of Morimoto because Vaughn does not disclose filters made of sintered short metal fibers. Accordingly, no combination of Morimoto and Vaughn teaches or suggest a second layer consisting of a self-supporting layer of sintered short metal fibers.

Also, claim 1 recites a layered filter structure with a first layer comprising a porous metal layer comprising a non-woven metal fiber fleece comprising long metal fibers. Neither Morimoto nor Vaughn teaches or suggests a non-woven metal fiber fleece. The PTO asserts

that “[i]t would have been within the purview of one of ordinary skill to have selected any type of non-woven material including fleeces. Absent a teaching of the criticality or showing of unexpected results from the first layer being a non-woven metal fiber fleece, it would not provide a patentable distinction over the prior art.” (Pages 2-3 of the Office Action.) A rejection on these grounds is improper.

First, Morimoto, Vaughn, or a combination thereof does not teach or suggest a non-woven metal fiber fleece; thus failing to establish a case of *prima facie* obviousness. In particular, to establish a *prima facie* case of obviousness, the prior art reference still must teach or suggest all the features of the claims. (See MPEP 2143.) The Supreme Court in *KSR Int’l Co. v. Teleflex, Inc.* has not removed the requirement that the prior art reference (or references when combined) must teach or suggest all the claim limitations. Indeed, KSR emphasized cases where all features are known.¹ The PTO’s statements that absent a teaching of the criticality or a showing of unexpected results from the first layer being a non-woven metal fiber fleece does not establish that the use of a non-woven metal fiber fleece in conjunction with the other elements of claim 1 is known in the prior art. The PTO cannot simply ignore a claim feature, but must find a prior art reference that teaches the claim feature. Because the PTO has not provided any prior art establishing a non-woven metal fiber fleece, the PTO has not established a case of *prima facie* obviousness in regards to the rejection of claim 1. Accordingly, claim 1 is not rendered unpatentable over the prior art.

Furthermore, the PTO seems to improperly shift the burden to Applicant by asserting that Applicant must show a teaching of the criticality or showing of unexpected results for the non-woven metal fiber fleece. This assertion is typically used after the PTO has determined that a particular variable is a results-effective variable that can be optimized. (See MPEP 2144.05.²) However, in this case, the PTO has not establishing that using a non-woven metal fiber fleece is a results-effective variable; thus one with ordinary skill in the art would not

¹ For example, the Court stated that “a patent composed of several elements is not proved obvious merely by demonstrating that each of its elements was, independently, known in the art...it can be important to identify a reason that would have prompted a person of ordinary skill in the relevant filed to combine the elements in the way the claimed new invention does.” 127 S.Ct. 1727, 1741 (decided April 30, 2007). Also, the Court noted three cases *United States v. Adams*, 383 U.S. 39 (1966), *Anderson's-Black Rock, Inc. v. Pavement Salvage Co.*, 396 U.S. 57 (1969), and *Sakraida v. AG Pro, Inc.*, 425 U.S. 273 (1976) which all dealt with the issue of whether known elements combined together would be obvious. These statements reinforce the concept that the elements of the claim have to be known in the art before they are determined to be combinable or not.

² “A particular parameter must first be recognized as a result-effective variable, i.e., a variable which achieves a recognized result, before the determination of the optimum or workable ranges of said variable might be characterized as routine experimentation. *In re Antonie*, 559 F.2d 618, 195 USPQ 6 (CCPA 1977).”

have been motivated to optimize the modified device of Morimoto by such a selection. Accordingly, claim 1 is not rendered unpatentable over the prior art.

Claim 9 recites a layered filter structure comprising a first layer with a porous metal layer comprising a non-woven metal fiber fleece; and a second layer consisting of a self-supporting layer of sintered short metal fibers and one or more of long metal fibers and metal powder particles. As previously mentioned, no combination of Morimoto and Vaughn teaches or suggests a non-woven metal fiber fleece. In addition, no combination of Morimoto and Vaughn teaches or suggests a second layer consisting of a self-supporting layer of sintered short metal fibers and one or more of long metal fibers and metal powder particles because Morimoto discloses a layer of metal fibers embedded in an adhesive layer and Vaughn does not disclose filters made of sintered short metal fibers.

Claims 2-4, 6, 8, 10-12, and 14-16 depend from and contain all the features of claim 1 or 9, and are allowable for the reasons indicated above, without regard to the further patentable features contained therein. It is noted, however, that no prior art has been set forth teaching the reinforcing structure of claim 8; thus the rejection of claim 8 is improper. The unsupported assertion that it would have been within the purview of one of ordinary skill in the art to have recognized that additional layers could be provided for the filter is no substitute for the requirement of providing prior art that teaches such a feature along with the other features of claim 8. It is further noted that no prior art has been set forth teaching the claimed amounts of short metal fibers and the long metal fibers and/or metal powder particles of claim 10; thus the rejection of claim 10 is improper. The unsupported assertion that it would have been within the purview of one of ordinary skill in the art to have added a sufficient amount of the particulate to achieve the desired improvements of the layer properties is no substitute for the requirement of providing prior art that teaches such a feature along with the other features of claim 10.

For at least these reasons, favorable reconsideration of the rejection is respectfully requested.

Rejection of claim 7 based on Morimoto, Vaughn and Nakagawa

Claim 7 is rejected under 35 U.S.C. 103(a) as being unpatentable over Morimoto and Vaughn in view of U.S. Patent 4,703,898 ("Nakagawa"). Claim 7 depends from and contains all the features of claim 1. As previously mentioned, no combination of Morimoto and Vaughn teaches or suggests a second layer consisting of a self-supporting layer of sintered

short metal fibers or a non-woven metal fiber fleece. Nakagawa does not cure these deficiencies. For at least these reasons, claim 7 is allowable without regard to the further patentable features contained therein.

Rejection of claim 13 based on Morimoto and Webber

Claim 13 is rejected under 35 U.S.C. 103(a) as being unpatentable over Morimoto in view of GB 1,190,844 (“Webber”). This rejection is traversed for at least the following reasons.

Claim 13 recites a method of manufacturing a layered filter structure comprising the step of providing a second layer consisting of a self-supporting layer of short metal fibers which are sintered together. Morimoto does not teach or suggest this feature because Morimoto discloses a layer of metal fibers embedded in an adhesive layer. Webber does not cure this deficiency. Accordingly, claim 13 is not rendered unpatentable over the prior art.

Additionally, neither Morimoto nor Webber teaches or suggests that the second layer is a self-supporting layer of short metal fibers which are sintered together. Morimoto does not teach or suggest a self-supporting layer at all. Webber teaches metal fibers that are interlocked in an intermingled relationship substantially solely by means of said rough outer surfaces thereof in frictional engagement or there may be a small amount of positive interlocking between the fibers as a result of curl imparted to them during manufacture. (Page 1, lines 32-42; page 2, lines 43-50; page 3, lines 92-96; and page 4, lines 65-70 of Webber.) Indeed, it appears that this type of intermingled relationship is one of the main points of the invention of Webber (see claim 1 of Webber); thus, Webber does not teach sintering. Therefore, claim 13 is not rendered unpatentable over the prior art.

It is asserted that “it would have been within the purview of one of ordinary skill in the art...to have recognized that the formed sheet layers could be sintered with a reasonable expectation of success of being suitable for use in forming the multilayer composite filter. Absent a teaching of the criticality or showing of unexpected results from the layered filter structure being joined in the claimed sequence, it would not provide a patentable distinction over the prior art.” (Page 6 of the Office Action.) A rejection based on these grounds is improper. First, the mere unsupported assertion that one of skill in the art would have recognized sintering is no substitute for the requirement of providing a teaching in the prior

art that sintering does take place.³ Furthermore, as stated above, one of the main points of the patent of Webber is that metal fibers are interlocked in an intermingled relationship substantially solely by means of said rough outer surfaces thereof in frictional engagement or there may be a small amount of positive interlocking between the fibers as a result of curl imparted to them during manufacture. Indeed, Webber mentions this feature no less than five times throughout the patent. (See page 1, lines 32-42; page 2, lines 43-50; page 3, lines 92-96; page 4, lines 65-70; and claim 1 of Webber.) It is not obvious to modify the teaching of a reference if such a modification changes the principle of operation of the reference. (See MPEP 2143.01.⁴) Because sintering the layer of Webber would change the operation of the layer of Webber, then a case of *prima facie* case of obviousness has not been met. Thus, claim 13 is not rendered unpatentable over the prior art.

For at least these reasons, favorable reconsideration of the rejection is respectfully requested.

Allowability of claims 17-20

Claims 17-20 depend from and contain all the features of claim 1 or claim 13, and are allowable for at least the same reasons as claim 1 or 13, without regard to the further patentable features contained therein. For at least this reason, allowance of claims 17-20 is respectfully requested.

Conclusion

Applicant believes that the present application is now in condition for allowance. Favorable reconsideration of the application as amended is respectfully requested.

The Examiner is invited to contact the undersigned by telephone if it is felt that a telephone interview would advance the prosecution of the present application.

³ As mentioned above, the Court in the KSR case did not remove the requirement that the prior art reference (or references when combined) must teach or suggest all the claim limitations.

⁴ "If the proposed modification or combination of the prior art would change the principle of operation of the prior art invention being modified, then the teachings of the references are not sufficient to render the claims *prima facie* obvious. *In re Ratti*, 270 F.2d 810, 123 USPQ 349 (CCPA 1959)"

The Commissioner is hereby authorized to charge any additional fees which may be required regarding this application under 37 C.F.R. §§ 1.16-1.17, or credit any overpayment, to Deposit Account No. 19-0741. Should no proper payment be enclosed herewith, as by a check or credit card payment form being in the wrong amount, unsigned, post-dated, otherwise improper or informal or even entirely missing, the Commissioner is authorized to charge the unpaid amount to Deposit Account No. 19-0741. If any extensions of time are needed for timely acceptance of papers submitted herewith, Applicant hereby petitions for such extension under 37 C.F.R. §1.136 and authorizes payment of any such extensions fees to Deposit Account No. 19-0741.

Respectfully submitted,

Date

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